

STRUCTURAL ASSESSMENT for the CENTENNIAL BAPTIST CHURCH

Helena, Arkansas

March 19, 2021



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Church interior before collapse. (National Historic Landmark, July 17, 2000)

1 INTRODUCTION

Chapter 1 | Introduction and Summary



Figure 1.1. Centennial Baptist Church, after April 2020 storm. (STRATA December 2020)

Introduction

This document presents the structural assessment and explores treatment options for the Centennial Baptist Church, located at the corner of Columbia Street and York in Helena, Phillips County, Arkansas (Figure 1.1). The church was constructed in 1905 in the Late Gothic Revival Style. Centennial was listed in the National Register of Historic Places in 1987 and was designated a National Historic Landmark in 2003.

The Centennial Baptist Church has been vacant since 1998. It is currently owned by the Centennial Church Foundation after acquiring the structure in 2018 from the E.C. Morris Foundation. Since 1993, efforts have been made towards the stabilization of the roof structural system. In 2003, the work was stopped while updating the truss T-5 that forms the transition between the nave and the transept. Already vulnerable, high winds severely damaged the church on April 12, 2020, by pushing the front (west) gable wall into the church, lifting the roofing off of the west portion of the building, and creating substantial structural damage. Since that time, the building has remained exposed to the weather and continues to deteriorate.

With the church building in a precarious state, there is a sense of urgency to determine a path forward for stabilization and to study options for the future of this historic site. The purpose of this report is to document damage that resulted from the high wind event and to explore

approaches for stabilization and potential rehabilitation, reconstruction, or re-imagining of the historic building and site.

The Centennial Baptist Church represents a tangible monument to the spiritual leadership and influence provided by Reverend E.C. Morris to the African American community. At the height of church membership in the early 1900s, there were over 1,000 congregants. The historical significance of the church is well researched and recorded in the National Register Nomination and the more recent National Historic Landmark (NHL) Nomination. At the time of the NR and NHL nominations, the church retained a high level of historic integrity with little alteration from the original construction. The building was listed as an NHL for the following reasons:

- National Significance associated with Religion
- National Register Criteria A (*Exception*) and B: Properties significant for their association or linkage to events (Criteria A) or person(s) (Criteria B) important in the past.
- Associated with Significant Person(s): Dr. Elias Camp Morris, pastor at the church from 1879-1922. Dr. Morris was prominent for “his efforts on a national level to further the religious, political, and societal achievements of African Americans [and also] for his leadership of the National Baptist Convention, the largest African American organization in the United States at the end of the nineteenth century.”¹
- Church Building: “Centennial Baptist Church ‘functioned as the headquarters of the National Baptist Convention,’ and it remains today as a symbol of his [Morris’s] progressive efforts to provide African Americans with a self-directed religious organization during the Jim Crow era.”²
- Architect/Builder: Henry James Price, the only known example in Arkansas of an African-American church design by an African American.³
- Period of Significance 1905 – 1922 (this aligns with the construction of the church through the death of Dr. Elias Camp Morris, pastor)
- Theme: Creating Social Institutions and Movements: Religious Institutions
- Historic Context: Social and Humanitarian Movements.

¹ “Centennial Baptist Church,” National Historic Landmark nomination, National Park Service, U.S. Department of the Interior, 2003, 9.

² National Historic Landmark nomination, 9. And E.C. Morris, *Sermons, Addresses, and Reminiscences*, (Nashville, TN: Townsend Press, 1993).

³ Preserve Kansas website, <https://preservearkansas.org/centennial-baptist-church/>, accessed on 3/1/2021.



Figure 1.2. Photograph of the west façade and north wall of the church, prior to the 2020 storm. (Photograph by Jameson Architects PA, August 2, 2017).



Figure 1.3. East and north walls of the church prior to the 2020 storm. (Photograph by Jameson Architects PA, August 2, 2017).

Centennial Church Timeline – Events, Advocacy, Stabilization, and Damage

1905	Church constructed.
1987	Centennial Baptist Church listed in the National Register of Historic Places.
1993	Assessment for stabilization work began by Jameson Architects and ICE Inc. Consulting Engineers.
1994	The E.C. Morris/Centennial Church Preservation Committee formulated to gain broader support to restore Centennial. ⁴
1994	Funding from the Arkansas Historic Preservation Program and Arkansas Humanities Council was provided. ⁵
July 1994	“Emergency Stabilization and Rehabilitation Feasibility Report – Centennial Missionary Baptist Church” by Borne & Jameson Architects PA, and ICE Inc. Consulting Engineers, Little Rock, for the Centennial Church Restoration Committee. Report guided the first emergency stabilization project. This report identified failing trusses, bowing walls, deteriorated soffits, water infiltration, failed roof flashing, failed roofing, masonry deterioration, window and door deterioration and missing elements, and water infiltration into the interior. (Figures 1.4 – 1.6)
1996	Arkansas Historic Preservation Program holds a conservation easement on the exterior of the church, which was donated in 1996 and related to the 1994 grant.
1998	Last service held in the church.
1998 - 2003	Stabilization of the first four roof trusses begins. Roof replaced. Repair drawings by Jameson Architects PA and I.C.E. Inc. structural engineers. Work was ongoing for several years, as the design team revised details and drawings to provide direction for stabilization.
2003	Centennial Baptist Church designated a National Historic Landmark. (Figures 1.7 and 1.8) Work on stabilization ceased in the midst of stabilizing truss T-5, which was approximately 40% complete.
2004	The E.C. Morris Foundation, Inc. was founded for the sole purpose of restoring the Centennial Missionary Baptist Church. ⁶ It is unclear if the title to the property was transferred to the Foundation at this time.
2005	\$300,000 Save America’s Treasures grant awarded, though subsequently declined by the E.C. Morris Foundation, Inc.
2006	Centennial Baptist Church listed on Preserve Arkansas’s Most Endangered Places List.

⁴ “The E.C. Morris Centennial Baptist Church Preservation Project,” no date.

⁵ Ibid.

⁶ “The E.C. Morris Centennial Baptist Church Preservation Project,” no date.

- 2014 Architect, Tommy Jameson, estimated approximately \$2 million to restore the church.
- 2018 Centennial Church Foundation founded.
- Centennial Baptist Church listed on Preserve Arkansas's Most Endangered Places List. (Figures 1.2, 1.3, 1.9, 1.10)
- 2019 Centennial Church Foundation formally acquired title to the church property.⁷
- 2019 Reconnaissance Survey of Selected Civil Rights Sites in Phillips County, Arkansas conducted by the National Park Service Midwest Regional Office. The focus was on Centennial Baptist Church, the possible site of the Hoop Spur Church, the Phillips County Courthouse, and additional resources in Elaine and Helena. This study recommended that Centennial may meet the criteria for inclusion in the national park system, but that there needed to be a special resource study and further research. Centennial Baptist was intact at the time of the survey and was noted as having a high degree of integrity.⁸
- March 2020 Amoz Eckerson with ECKERBUILT, Architect/Builder, provided a Conditions Assessment & Recommended Scope of Work to the Centennial Church Foundation Board of Directors. His summary concluded:
- The building is not safe and in critical condition.
 - Leaking water through the roof is causing the floor to collapse in areas.
 - Scaffolding left in place for the last 17 years is compromised.
 - The roofing is beyond repair and requires new decking.
 - Open windows allow birds access into the the interior.
 - Perimeter fence with warning signs is advised.
 - Alarm system recommended.
 - Due to the lack of space on the site, procurement and demolition of adjacent properties may facilitate staging and construction of a multi-phased, multi-year restoration.
 - Work will require specialty contractors from out of town. Housing for out-of-town workers adds considerable cost to construction.
- April 12, 2020 Straight-line winds damaged the church, pushing the west gable wall into the building and lifted off a majority of the roof, causing significant damage.
- April 14, 2020 Amoz Eckerson with ECKERBUILT, Architect/Builder, provided an amendment to the March 2020 Conditions Assessment & Recommended Scope of Work to the Centennial Church Foundation Board of Directors. His summary concluded:
- Safety is paramount concern.
 - Prompt action is necessary to prevent further loss.
 - Optimistic about moving forward with the church repairs.
 - The collapse is viewed to have exposed weakness in the structure.
 - Removal of debris and installation of safety fence is advised.

⁷ Reconnaissance Survey of Selected Civil Rights Sites in Phillips County, Arkansas, National Park Service, 2019, 29.

⁸ Reconnaissance Survey of Selected Civil Rights Sites in Phillips County, Arkansas, National Park Service, 2019.

- Hire a structural engineer.

May 2020

Letter to Centennial Board from Amoz Eckerson (EckerBuilt). Refers to tour of the church with structural engineer Frank Allison. This letter was followed by a summary of observations from the walk through.

- Building is highly unstable and can collapse at any time.
- No attempt should be made to salvage artifacts.
- Concern for the building and occupants of the building to the south.
- Instability makes it hard to work on and around.
- Will continue to deteriorate rapidly and become more unstable.
- No part of the existing roof system can be reused.
- East braced wall may be 'okay.'
- North and south walls of the nave/sanctuary are 'okay.' Do not pull windows out, this may destabilize the wall.
- Remediation work would begin with bracing walls.

Fall 2020 – Spring 2021

Structural Assessment by STRATA Architecture Inc. and Structural Engineering Associates, Inc.



Figure 1.4. Interior view of the sanctuary looking east. (Photograph from the 1994 Jameson report).



Figure 1.5. Interior view of the sanctuary looking west, note the bowed triple 2x6 temporary supports at the south (left) wall. (Photograph from the 1994 Jameson report).



Figure 1.6. Typical roof trusses where the transept and nave meet, looking northwest. (Photograph from the 1994 Jameson report).



Figure 1.7. Photograph of the interior, looking west.
(National Historic Landmark Nomination image, July 17, 2000).



Figure 1.8. Photograph of the interior, looking east toward the dais and organ.
(National Historic Landmark image, July 17, 2000).



Figure 1.9. Trusses T-1, T-2, and T-3 stabilized, looking southwest.
(Photograph by Jameson Architects PA, August 2, 2017).



Figure 1.10. Truss T-4 (stabilized in the foreground) and Truss T-5 in the midst of stabilization with scaffolding. (Photograph by Jameson Architects PA, August 2, 2017).

Discussion with the Centennial Church Foundation Board (December 2020)

- Without considering cost, the Centennial Church Foundation Board would prefer to restore the church. This approach would involve repair of exterior masonry walls to serve as a non-load-bearing envelope and construction of a new steel structure built on the inside face of the exterior walls. Restoration would allow new flexible building uses including permanent and changing exhibits, educational programs, and community gatherings.
- If restoration is not an option, the Foundation is open to demolition, salvaging materials, and rebuilding.
- The third option to create a Memorial would likely be their last preference.
- Themes for potential interpretive exhibits or themes were discussed:
 - Reverend E.C. Morris
 - 1919 Elaine Massacre
 - Jim Crow – not a story told at many National Parks
 - History of African-American church music
 - Black religious history. Centennial Baptist was the center of the Baptist National Convention.
 - Civil Rights Trail from Memphis to Vicksburg
 - Henry James Price, African American Architect/Builder
 - History of Helena microcosm of regional and national race history and fight for equal rights.

Goals of the Structural Assessment Report

The goals of this Structural Assessment Report include:

- Promote community safety.
- Identify appropriate design solutions for stabilization and repair.
- Identify constructability strategies.
- Comply with regulatory requirements (laws, regulations, codes, etc.)
- Coordinate recommendations with the Centennial Church Foundation Board to integrate their plans and expectations for the church.

Salvaging Historic Materials

Recognizing the building is in a precarious condition, the Centennial Foundation has identified several items they would like to have salvaged. This work must only occur after the building has been stabilized and the roof trusses removed.

- Church Organ – Salvaging the 1908 pipe organ is a priority. This organ has some protective framing and plastic covering surrounding the case, but the pedals and pipes are mostly exposed. The blower equipment in the crawlspace appears to be corroded and may not be salvageable.
- Stained glass and decorative glass windows.
- Remaining remnants of church pews.
- Chandelier that hangs over the dais (the other one was likely destroyed with the roof collapse).
- Any other furnishings that can be safely removed from the rooms in the transept.



Figure 1.11. Team assessing church from lift. (STRATA 2020)

Project Methodology and Team Members

STRATA Architecture Inc. and Structural Engineering Associates, Inc., both from Kansas City, were contracted through the National Park Service, Midwest Regional Office, to provide the assessment and report for this project. This project was initiated through the Historic Preservation Partners Program, which provides technical assistance to National Historic Landmark properties in the Midwest Region / Interior Regions 3, 4, 5 – Great Lakes, Mississippi Basin, and Missouri Basin.

- Rachel Franklin-Weekley, Program Manager, Historic Preservation Partners Program, provided background information.
- John Rosemurgy, Historical Architect, Contracting Officer's Representative, provided project management.
- Kyle Miller, Executive Director of the Delta Cultural Center and Centennial Church Foundation Board Member, provided local coordination.
- Amoz Eckerson, local architect/builder, provided background on previous work and stabilization efforts, as well as vision for the building rehabilitation efforts.
- Tommy Jameson, historical architect from Little Rock, provided access to previous building stabilization files, including research, photographs, drawings, and electronic files, free of charge, and he spent several hours meeting with our team over the phone and in person to discuss his firm's previous work. Without his input, the existing assessment would not have been possible to the extent it was able to be completed.

Assessment work was conducted by STRATA Architecture and Structural Engineering Associates in December 2020. The on-site assessment work included overall building perimeter measurements, photography of the exterior and portions of the interior, and assessment of the remaining structure. Due to the fragile condition of the ruin, it was assessed from ground level and from an aerial lift that was moved around the building (Figure 1.11). This lift platform carried two structural engineers who were able to survey conditions from above. The lift was able to access some areas within the fenced area on the east, north, and west sides of the building. The south yard is covered in debris and the lift was not able to access that side of the property. Interior access was extremely limited. The team was able to walk through a portion of the transept (east portion) of the building. The assessment occurred on a sunny day with very low winds. Access into the fenced area was provided by Kyle Miller. No materials testing or destructive investigation was undertaken as part of this initial assessment.

Summary of Treatment Recommendations

Drawings of existing and proposed work are included at the back of the report for reference.

Treatment Options and Recommendations are presented in Chapter 3 and are outlined below.

Treatments are arranged as such:

Stabilization Phase 1 – Short Term – Immediate work to preserve the stability of the ruins.

Stabilization Phase 2 – Long Term – Work required after Phase 1 to preserve the ruins while long term planning and fund-raising effort progress.

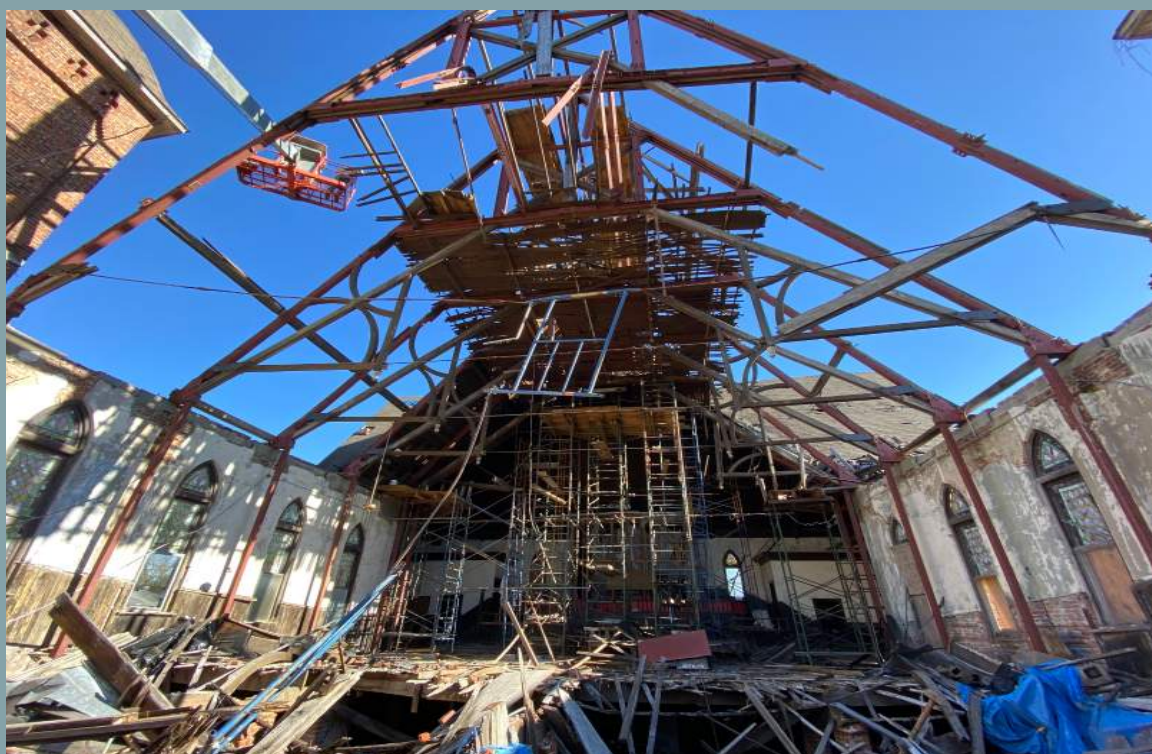
Treatment Option A – Historic Shell Rehabilitation and New Infill Construction – Work which would utilize the existing historic masonry walls, and essentially construct an all-new church structure on the interior.

Treatment Option B – Demolition and New Construction – Demolish the existing church ruins and incorporate salvaged bricks and other materials, such as the windows, into the new building design.

Treatment Option C – Memorial Concept – Demolish and/or salvage portions of the existing church. Design and construct a new memorial in the form of a structure or landscape to support future interpretation and educational efforts.

Summary of Work with Cost Estimates – Outlines the work involved in each phase and option to support the cost estimates.

Cost Estimates – Included for Stabilization Phases 1, 2, and Treatment Options A and B. These are cost estimates, based on known issues and typical costs. The stabilization and rehabilitation efforts will require experienced trades that may not be local. The proposed costs may be reduced if the stabilization and treatment work is completed consecutively without significant lapses.



Structural Assessment (STRATA 2020)

2 STRUCTURAL ASSESSMENT

Chapter 2 | Structural Assessment

Refer to the drawings at the end of the report that show the overall church plan and building section, as well as schematic details for stabilization. Drawing S2 shows the system for truss numbering used throughout this section of the report

Structural Assessment Introduction

The Centennial Baptist Church at the corner of Columbia Street and York in Helena, Arkansas is a brick masonry and timber roof framed structure, built in 1905.

In April of 2020, a straight-line windstorm damaged the structure causing the west gable façade to collapse into the nave. Much of the roof was ripped away, exposing the roof trusses and the interior of the church (Figure 2.1).



Figure 2.1. Drone photo following collapse, looking east at west façade collapse.
(Courtesy Amoz Eckerson and Nolan Dean, 2020)

This assessment was performed to observe and document the existing condition of the remaining structure and determine alternatives for stabilization or reconstruction.

This structural assessment was performed in early December 2020. The assessment was primarily visual; no excavations were performed, no destructive or non-destructive testing was performed, and no samples of building materials were acquired for laboratory testing. No loading analysis or calculations were performed for this report.

During the storm, it is unknown how the failure of structural components may have impacted or affected others in the collapse. This report and assessment do not attempt to provide a

sequence of failure or determine the deficiencies in the design or condition of the structure that led to failure.

The NPS, Centennial Church Foundation, and consultants previously involved in repairs to the structure have provided documents including reports, letters, drawings, and photographs showing the history of the church and previous stabilization construction documents. These documents provided the basis for the information contained in this report, including overall dimensions and the existing conditions of the structure prior to the high wind event.

At the time of the assessment, a temporary 6-foot tall chain-link fence had been installed around the perimeter of the structure. The fence is located near the street curb on the north and west sides of the property, and along the edge of the alley to the east. The fence separates the church and the existing occupied structure to the south. Within the fence, near the structure, there was substantial roofing debris, especially at the north and south walls.

The exterior of the structure was from ground level at varying distances over the debris where possible. A 66-foot aerial boom lift was also used to observe higher elevations of the structure. The lift was operated from within the fenced area.

The interior of the structure was observed at some distance from the aerial lift and was also briefly accessed on foot. Entry was made at the southeast corner of the church, and movement inside the church was very limited due to the dangerous conditions within. Only some of the transept, or eastern portion of the inside of the church, was observed. No efforts were made to venture into the nave or into the crawlspaces. There was some limited visibility into the crawlspaces from openings through the floor.

Structure Description



Figure 2.2. Centennial Baptist Church west façade and north wall. (National Historic Landmark nomination photograph, 2000)

The church is T-shaped in plan, with the nave on the west, and the transept on the east. The nave has a very tall, steeply sloping gable roof with the ridge running east-west. The transept also has a steeply sloping gable roof, but shorter, and running north-south. The church faces west toward Columbia Street. The façade featured a large brick gable, now collapsed. The remnants of this wall are flanked by two towers with entrances to the church. The north tower is taller than the south tower and has stained glass windows above the doors (Figure 2.2).

Based on the information provided by the National Park Service (NPS), the church had fallen into a state of severe disrepair years before the 2020 storm. Architectural and structural repair efforts were initiated in phases from 1998 until 2003. Due to budget shortfalls, the repairs were not fully completed. The majority of these repairs was to the roof framing and replacement of the roof cladding.

Foundation

The church foundation was not studied as part of this assessment. No excavations were performed on the exterior of the structure and access to the crawlspace or basement area was considered unsafe.

From the aerial lift over the nave, it was observed the west wall debris crashed through a portion of the floor framing into the crawlspace below.

Brick piers that once served as intermediate floor framing are also visible. The size, number, and locations of these piers could not be fully observed during this assessment.

Based on photographs and documents provided by the NPS and by previous consultants, there have been additions to the foundations for the installation of steel posts to support truss framing above. There were excavations against the interior face of the exterior brick walls and reinforced concrete footings were installed for the steel posts. Additionally, a reinforced concrete slab was installed in the crawlspace through much of the center portion of the nave to provide bearing for the temporary shoring and jacking of the roof trusses during the stabilization process.

Floor Framing

The floor framing for the church consists of wood joists and beams. The framing is supported along the perimeter where members are bearing on the brick masonry. Brick piers on the interior also support the framing.

Originally, the floor framing was sloped from the back of the church down towards the transept and also slightly concaved. In the center of the transept is the dais, a floor that is elevated by a few steps like a stage, presumably where the altar or pulpit would be. The dais has two levels, with the organ and pipes situated on the higher level along the east wall of the transept.

In the collapse, the western brick gable wall fell into the nave, destroying all the floor framing on the west half of the nave (Figure 2.3). What remains on the east half is covered in debris and is unstable.

Prior to the structural collapse, the floor framing and flooring was in very poor condition. There was severe rot due to moisture and possibly insect damage. Photos taken during the previous repairs show supplemental posts and beams supporting the floor framing below the nave (Figure 2.4). Other photos also show the flooring covered in bird excrement and severe rotting of the floor below openings in the roof.

Photos taken during the 2020 assessment show the severe deterioration of the floor joists and flooring, which was a longstanding condition prior to the collapse (Figure 2.5).

Additionally, penetrations were made through the flooring for the use of scaffolding in the truss repair projects. Some of this scaffolding is still in place below truss T-5. There is additional scaffolding bearing on the original wood flooring and floor framing alone, with no direct load

transfer to the floor of the crawlspace. This scaffolding is especially precarious and is sinking into the floor in some locations (Figure 2.6).

There are interior rooms in the northeast and southeast corners of the transept. Where the interior walls of these rooms intersect with the exterior brick walls, there are large cracks and settlement of the interior walls indicating differential movement between the interior and exterior walls (Figure 2.7). Based on earlier photos, this has been a longstanding issue for the structure.



Figure 2.3. Looking down into nave from aerial lift. (SEA 2020)



Figure 2.4. Severe flooring deterioration in nave prior to collapse.
(Courtesy Tommy Jameson, 2017)



Figure 2.5. Collapsed and deteriorated first floor framing in the transept. Scaffolding going through floor supporting overhead trusses. (SEA 2020)



Figure 2.6. Collapsed and deteriorated floor on the south portion of the transept. Note scaffolding supported by the wood floor. (SEA 2020)



Figure 2.7. Wide gap between interior wall and east transept exterior wall. (SEA 2020)

Roof Framing

The original construction of the roof framing was mass timber trusses, bearing on the exterior brick walls. There are five trusses in the nave that run north-south, and five in the transept that run east-west. The three trusses in center of the transept frame into, and are supported by, the easternmost truss of the nave, truss T-5. The nave trusses are a scissor design, approximately 56-feet wide and 43-feet tall. The scissor configuration and the steep slope of the roof allow for a soaring ceiling and open space within the church; there were no interior columns in the church to support any roof framing. The timber truss framing below the ceiling was exposed, and there was a long iron or steel tension rod at the base of each truss, to keep the thrust from the truss from pushing out against the top of the brick walls.

Timber purlins are evenly spaced along the top chords of the trusses. The purlins span laterally from truss to truss and support smaller roof rafters. The rafters then support the roof diaphragm of wood sheathing and asphalt shingles. In the finished sanctuary, the ceiling space between the purlins was infilled with stained wood boards.

The major work of the previous phased stabilization efforts from 1998 through 2003 was to retrofit the historic mass timber trusses. The trusses were numbered in the previous repair documents provided by Jameson Architects. There are four trusses over the nave. Truss T-1 is the western-most truss, and truss T-5 is the eastern-most truss, which is also supporting east-west trusses from the transept (Refer to Drawing S2 for truss numbering).

Prior to the 2020 storm, the historic timber trusses were deteriorating, and the bearing condition at the top of the brick masonry walls was problematic. There was also some shifting or movement of the framing, and the roofline was uneven. The stabilization and retrofitting efforts involved adding supplemental steel framing to the trusses, installing new steel posts to support the framing, and jacking the trusses back into place. The new framing was also tied into the brick masonry to brace the top of the exterior walls. The structural design and process for performing these repairs was very involved from all aspects throughout construction. The repairs were performed for four nave trusses (Trusses 1 through 4) and repairs were initiated but not completed for the eastern-most nave truss (Truss 5). Since this truss functions to support three of the transept trusses, the design and repair was more complicated than for the other four nave trusses.

It was estimated about 40% of the work on T-5 was completed when the work was halted in 2003. No further stabilization has occurred in the last 18 years. As a result of the partial collapse of the church in the spring of 2020, the original wood roof trusses over the nave are now exposed to the elements. The trusses and the supporting steel are still standing (albeit damaged), but much of the roof diaphragm, rafters, and purlins are gone (Figures 2.8 and 2.9). There are also holes in the roof of the transept and the roof of at least one of the towers. Based on older photos, these holes were already present prior to the partial collapse.



Figure 2.8. Exposed nave trusses viewed from aerial lift. (SEA 2020)



Figure 2.9. Exposed nave trusses viewed from aerial lift. (SEA 2020)

The western-most truss of the nave, truss T-1, is severely damaged and distorted, but still standing following the storm (Figure 2.10). The steel columns have pulled inward from the masonry walls, pulling with them portions of the top of the brick walls. The bottom chords of the truss, which were timber and not reinforced with steel, are broken and have fallen. The tension rod for this truss is sagging and there is a piece of scaffold hanging from it. All but one of the timber purlins connecting the truss back to the others are gone, but there are six steel angle braces back to the other trusses keeping truss T-1 upright.



Figure 2.10. Truss T-1. (STRATA 2020)

Trusses T-2, 3, and 4 are similarly exposed to the elements, but they do not appear to have disconnected from the walls like truss T-1. In the time that this wood and steel framing has been exposed to weather, it has been subject to advanced deterioration from wood rot. Some mild corrosion was visible for the bolts connecting the steel members, and as the wood absorbs and holds moisture, there is the potential for corrosion where steel is in contact with the older wood framing.

Truss T-5, which was only partially reinforced with steel, is visibly sagging along the top south chord. The timber here is rotted completely, the result of years of roof leaks in this area (Figure 2.11).



Figure 2.11. Looking down at south chords of truss T-5. (SEA 2020)

Exterior Walls

The brick masonry walls in general are triple-wythe, or three courses thick, laid in a common bond with header courses every seventh course. The bricks themselves are large; they would be considered a unique oversize by today's standards. There are architectural details in the brickwork that project out from the face of the walls or are recessed. Some upper sections of the walls are recessed by one course, creating large portions of thinner, 2-wythe wall. This occurs on the gable ends as well as on the north tower.

The extent of collapse for the west gable wall is down to the sills or just below the sills for the stained glass windows. Portions of the two buttresses on the front are remaining for a few feet higher than the sills. The brick of the west gable is toothed into the north and south towers and has sheared at or away from the face of the towers, leaving the masonry for the towers generally intact.

At the base of Truss 1 on both the north and south walls, a portion of the top of the wall has dislodged and come away with the truss (Figure 2.12). Truss 1 is located just to the east of the towers, and the brick that has come away also includes the corner of the towers where the towers meet the walls.



Figure 2.12. Base of Truss 1 at south wall. (SEA 2020)

Additional major damages to the brick that might have been caused by the storm were not able to be observed.

Other conditions of deterioration of the brick masonry around the remainder of the structure appear to have been longstanding issues, pre-existing the partial collapse.

Throughout the remainder of the structure on the masonry, there are open mortar joints, eroded bricks, missing or fallen areas of bricks, broken bricks, and cracks in mortar joints.

At the base of the west wall is an example of an area that has open joints and the faces of the bricks have spalled or eroded. There appears to have been some improper repairs to the mortar joints performed here some time ago. The joints were repointed using a modern, harder mortar, which has caused the bricks to deteriorate in deference to the mortar (Figure 2.13).



Figure 2.13. Eroded and deteriorated brick wall, west facade. (SEA 2020)

The walls have many tall, slender stained glass windows with blunt pointed arches. There are vertical cracks at the tops of some of these windows, which may extend through the full width of the wall (Figure 2.14).



Figure 2.14. Cracking over pointed arch window. (SEA 2020)

There are several areas on the exterior walls where the exterior wythe of brick has separated from the wall. The largest example of this is on the east side of the north tower. This damage was from prior to the storm and may have been exacerbated by the growth of a tree and roots within the masonry wall structure (Figure 2.15).

Another example of areas where brick is missing is at the base of many of the buttresses (Figure 2.16). Some of these areas show collar joints in the wall. These joints, which make a vertical space between the wythes of brick, may be intentional by design or the result of mortar washout. Regardless, these openings allow for moisture to travel within the wall matrix.

There is an area of brick that was observed over the lintel of the north door on the south tower. Here the lintel is wood-framed, and the brick above has clearly separated from the wall and is ready to fall (Figure 2.17).



Figure 2.15. Outer wythe of brick removed at east wall on north tower. (SEA 2020)



Figure 2.16. Base of buttress, missing bricks, open collar joints within. (SEA 2020)



Figure 2.17. Stepped cracks in bricks over failed door lintel on south tower. (SEA 2020)

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North wall with historic stained glass windows. (STRATA 2020)

3 TREATMENT OPTIONS AND RECOMMENDATIONS

Chapter 3 | Treatment Options and Recommendations

Refer to the drawings at the end of the report that show the overall church plan and building section, as well as schematic details for stabilization. Drawing S2 shows the system of truss numbering used throughout this section of the report.

Treatment Options and Recommendations Introduction

In its current state, the Centennial Baptist Church structure is unstable and presents a safety hazard to the public and nearby occupied structures. The roof framing is damaged and deteriorated to the extent that efforts to repair it would be too dangerous to attempt. Progressive collapse of the structure is also a very serious concern, where the failure of one element could trigger a cascading failure of connected members. Truss T-5, at the transition between the nave and the transept, is especially vulnerable to this type of failure. It is in a state of severe disrepair and is carrying significant roof loads from the adjacent trusses to the east.

The tall, unreinforced brick masonry walls are also susceptible to failure. These walls rely on the roof framing for lateral bracing. If there is additional collapse of the roof framing, these walls would become unbraced and may fall. Catastrophic failures of masonry walls can throw debris a distance more than three times the height of the wall, putting adjacent structures and people in harm's way.

Access to the interior of the structure should not be permitted because there is too great of a danger of falling debris and potential for further collapse of the roof trusses. Additionally, there is debris on the floor which is a hazard in itself and can hide the condition of the flooring below. It is recommended that no efforts be made to attempt to salvage any building materials or other contents of the building until after stabilization efforts are performed. The precarious nature of the existing structure makes it impossible for the safe removal of stained glass windows, pews, lighting, or other furniture, and especially the large pipe organ.

For safe stabilization of the structure, it is recommended that the whole of the roof framing be demolished, the tall brick gable walls at the north and south ends of the transept be partially disassembled to a lower height, and all brick walls be braced on the exterior and interior. The methods used to perform these tasks would need to be meticulously laid out and will be very time-consuming. In contrast to many common destructive demolition methods such as using a wrecking ball, safely dismantling this structure would be more like surgery. The following recommendations are provided as a first step in any future option that would include the salvaging of any of the original church structure.

It cannot be stressed enough that the demolition contractor for the phased Stabilization and other Treatment Options presented here should be experienced in the practice of historic building demolition and salvaging historic materials. The architectural and structural engineering design team for these proposed projects should have experience in rehabilitation of historic properties similar in scope and scale to these projects. Nearly all work recommended for stabilization, repairs, and future long term projects will require the services of specialty trades that may not be available locally. Costs to import tradespersons, pay for travel, per diem, and

overnight stays, can be very large in comparison with material costs. Specialists may include the Demolition Contractor and the General Contractor (both with experience in the rehabilitation of historic buildings); masons trained in historic restoration work; stained glass artisans; steel and heavy timber framing workers; crane operators; and many other potential subcontractors.

Treatment Approach

The Centennial Baptist Church is a National Historic Landmark (NHL) that had retained a high degree of historic integrity prior to the 2020 storm event that caused the catastrophic damage to the building. The long term consequences of this damage and how it will affect the NHL status of the building are unknown at this time. Regardless, the history and events associated with the church and this site are well known and depending upon the direction selected for a long term treatment, the site may continue in physical or memorial form, to convey the significance of Reverend Morris' commitments to the African American community.

When planning for stabilization and long term treatment, it is recommended to follow the Secretary of the Interior's Standards for the Treatment of Historic Properties,¹ established by the National Park Service to provide guidance for the maintenance, repair, and work associated with historic buildings. There are four approaches for treatment, including *Rehabilitation*, *Preservation*, *Restoration*, and *Reconstruction*.² For the Centennial Baptist Church, a combination of all of the above may be appropriate, depending on the long term planning efforts for the site. Initially, the goal is to **Preserve** the ruins, so that later they may be **Rehabilitated**. It will not be financially feasible to perform a true **Restoration**, and it's not recommended to complete a true **Reconstruction**, because it may distort or misrepresent the historical record of the structure.

Preservation

Preservation includes applying measures to sustain the existing form, integrity, and materials of the character-defining features of a historic property. This baseline approach focuses on stabilizing and protecting extant historic materials and features, rather than replacing missing elements. It is appropriate when a historic property is intact and does not require extensive repair or replacement, and when continuing or new use does not require additions or alterations. Depiction at one particular period of time is not appropriate under this approach.³

*Although **Preservation** is an appropriate approach for the treatment of the existing church ruins on a temporary basis in order to prepare for long term planning efforts. The long term Memorial Option may also select to **Preserve** certain features as part of a re-imagined site, such as one or both towers or stained glass windows.*

¹ Anne E. Grimmer, The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings, (Washington, DC: Department of the Interior, National Park Service, 2017).

² Grimmer, 2-3; and Birnbaum and Peters, 3-5.

³ Birnbaum and Peters, 17-18.

Rehabilitation

The act or process of Rehabilitation allows repairs, alterations, and additions necessary to enable a compatible use for a property, as long as the portions or features which convey the historical, cultural, or architectural values are retained. This approach is appropriate when depiction at one particular period of time is not required; repair or replacement of deteriorated features is necessary; or alterations or additions are needed for a new use.⁴

***Rehabilitation** is likely the most appropriate treatment (Treatment Option A – Historic Shell Rehabilitation and New Infill Construction), because it provides for the protection of contributing features, including the exterior masonry shell and original windows, while allowing for compatible changes to support the construction of the new infill construction, including adding ADA accessibility, new HVAC, electrical, lighting systems, replacement windows and doors, and new restrooms, as may be required for the new programming of the new infill space.*

Restoration

Restoration is the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period in time. This includes the Reconstruction of missing features from the target period and removal of features from all other periods. The approach can be considered only when the property's significance during a particular period of time outweighs the loss of extant elements from other historical periods; when there is substantial physical and documentary evidence for the work; and when contemporary alterations and additions are not planned.⁵

***Restoration** might be the most appropriate approach for the long term treatment of the Centennial Baptist Church, but the economic feasibility will likely not allow for this approach. This would require **reconstruction** of missing materials, such as the trusses and roof system, as well as the interiors, to match the original conditions. The expense associated with this approach would be cost prohibitive. Also, this approach would not allow for the upgrading of the structural systems, which may change the interior character of the space, including thickening of walls, installation of columns or pilasters, and other required ADA upgrades and changes to the interior and exterior of the building. There is simply too much damage to the structure overall to consider **Restoration** as a viable economic option.*

Reconstruction

Reconstruction is the act or process of using new construction to depict a non-surviving site, landscape, building, structure, or object as it appeared at a specific period of time in its historic location. The approach is appropriate only when the property's significance during a particular period of time outweighs the potential loss of extant features that characterize other historical periods. In addition, there must be substantial physical and documentary evidence for the work, and the work must be clearly identified as a contemporary re-creation.⁶

⁴ Birnbaum and Peters, 47-48.

⁵ Birnbaum and Peters, 89-90.

⁶ Birnbaum and Peters, 127-129.

Reconstruction of a new building on this site may be the preferred long term treatment (Treatment Option B – Demolition and New Construction). However, a pure **Reconstruction** of the church, matching all of the historic building elements, construction methodologies (many which failed), and features would create a false sense of historicism and may also be cost prohibitive. Also, reconstruction would necessitate removal of remnant construction that could still impart historical values. For this reason, a pure **Reconstruction** was not a selected approach.

The Secretary of the Interior’s Standards for Rehabilitation

The *Secretary of the Interior’s Standards for Rehabilitation*⁷ are the criteria used to assist in the long-term protection and repair of historic materials and features. These standards pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and interior of historic buildings. The Standards also encompass related landscape features and the building’s site and environment. The design approach for Option A - Historic Shell Rehabilitation and New Infill Construction, should be designed to incorporate these criteria.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the

⁷ <https://www.nps.gov/tps/standards/rehabilitation.htm>, accessed February 2021.

old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Stabilization Phasing

It is assumed that any type of stabilization or repair project associated with this building will be conducted in phases to address immediate needs while allowing for planning and long term fundraising efforts.

- **Stabilization Phase 1 - Short Term** - Efforts would focus on the removal of debris and damaged building components while preserving as much of the remainder of the church exterior masonry walls and the two towers as possible. This phase of work should be considered to be temporary stabilization.
- **Stabilization Phase 2 - Long Term** - Provides direction to allow for the stabilization of the masonry wall ruins and offers more long-term support and protection of the building. This phase must be completed if there is a long-term plan to rehabilitate the building or utilize any of the masonry walls or tower components as a part of future design efforts.

Stabilization Phases 1 and 2 are additive and will be required for the implementation of *Treatment Option A – Historic Shell Rehabilitation and New Infill Construction*, as well.

Stabilization Phase 1 - Short Term

Pre-Stabilization Efforts

In the event of continued structural collapse, falling or projectile debris is unpredictable. There are concerns for the proximity of the occupied multi-family dwelling to the south, the structure located east of the church across Broads Alley, and even the building across York Street to the north, which may be impacted if the church structure were to collapse and cast debris. It is recommended that a barrier wall be constructed between the church and the dwelling to the south, at the location of the current temporary fencing or even further south. This wall would serve the purpose of protecting the dwelling and its inhabitants. It is also recommended that the dwelling be vacated during activities that may involve dismantling remnants of the church. A previous report presented to the Centennial Church Foundation in March 2020 by ECKERBUILT recommended purchasing and demolishing the adjacent properties prior to starting work, for safety reasons, as well as lack of available laydown and working area during construction.

Due to the location of the structure, situated at the corner of the block and with structures to the east and the south, there is inadequate space for demolition and construction staging. As roof framing is removed, it will need to be set down nearby, some distance away from the structure. The most practical location for the construction laydown and staging area, without purchasing adjacent properties, would be to the north of the structure, on York Street. Utilizing York Street would necessitate temporary road closure and limit parking next to the structure on the north side of the street.

There are several power poles near the structure, and some lines may interfere with dismantling efforts. At this time, it is unknown which of the lines are energized and which are for cable or phone service. Typically, the lower wires are phone or cable utilities, and these are present close to the structure on the west and north. These lines may need to be temporarily moved for aerial lift or crane access. There are other lines on the east that may be energized, and these would likely need to be de-energized or relocated for removal of the roof framing (Figure 3.1). All utilities to the building should be completely removed and capped. This includes gas, electrical, water, and sanitary.

The stabilization process would likely begin with careful removal of debris from around the exterior perimeter of the building and site to allow access to the structure for dismantling the roof framing (Figure 3.2). Debris removal should only be performed in good weather with no or very low winds. Very low winds for this purpose would be defined as 15 mph or less.

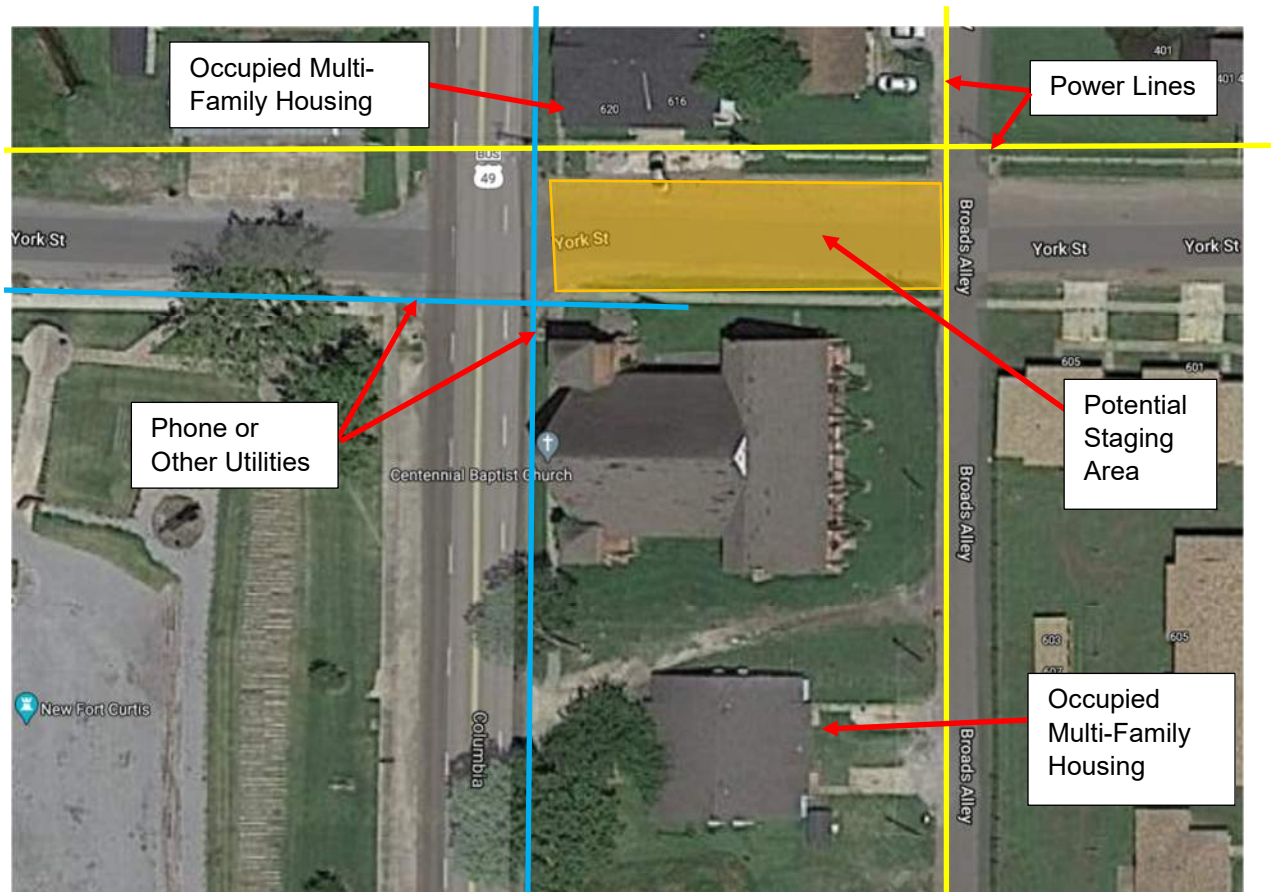


Figure 3.1. Aerial view of church and surroundings. (Google)



Figure 3.2. Drone photo following collapse. (Courtesy Amoz Eckerson 2020)

Temporary bracing is recommended for the transept north and south walls to prevent them from collapsing outward. Work would involve placement of two braces at each wall. Braces would be installed with an aerial lift, anchored to concrete block bases, and connected to the walls near the tops of the buttresses. An example of this bracing is shown below (Figure 3.3). These braces would help to limit the collateral damage from a potential collapse of these walls. These braces would eventually be replaced with more permanent braces following removal of the roof framing and disassembly of the upper portions of the gable walls.



Figure 3.3. Example of temporary wall bracing at north and south transept walls. (ezgmfg.com)

Roof Framing Removal

The demolition of the roof framing would likely be performed using workers on two or more aerial lifts in conjunction with a crane. At least one lane of traffic would need to be closed on Columbia Street for the crane. Work should be performed under the direction of a structural engineer (experienced with historic masonry and timber structures), to direct the sequence of removal. The progression of disassembly would likely involve removal of roof trusses one at a time. A worker in an aerial lift on either side of the truss would connect cables from the crane to the truss. Each truss would be picked by the crane, while workers on lifts would cut connections of the individual truss to the columns and cut lateral connections to adjacent trusses. Since the nave truss T-1 appears to be the most precarious, this would likely be removed first (Figure 3.4).



Figure 3.4. West side of church from across Columbia Street. (SEA 2020)

A major concern for the sequence of truss removal is the intersection of the nave trusses and the transept trusses. The three center transept trusses are supported by the nave truss T-5 and are imposing lateral as well as gravity loads to the nave truss T-5. The transept trusses may also be providing stability to the nave trusses. The lateral and gravity forces imposed on truss T-5 are unknown, and partial framing removal could create additional instability for the trusses. Additional investigation and analysis is required to provide a specific sequence of truss removal, but based on a preliminary engineering assessment, one scenario may be to add temporary cross bracing between the trusses on the nave prior to removal of the transept trusses.

The steel framing is bolted in place and due to surface corrosion on the bolts, they may not disconnect easily. If any steel needs to be cut with a torch or saw, fire precautions would be necessary. Another option would be a portable cold saw, which are typically very expensive and still do not eliminate all sparks.

An additional note for the roof framing removal is that the existing roof purlins and roof diaphragm are still providing some measure of bracing for the trusses. These components should be left in place as much as practical in the framing removal process. In other words, it would not be a good approach to begin by first removing all the remaining roofing and purlins for the whole structure prior to removal of the first truss. The process could be piecemeal; areas of

roofing adjacent to a truss would be removed by the workers on lifts, then the truss would be removed. Roofing removal (including rafters and purlins) could be cut away using chainsaws.

It should also be noted that the condition of the scaffolding within the church is precarious and any connections to the trusses above are unclear. It is presumed that the scaffold would be dismantled in conjunction with removal of the trusses, at least down to a level that would be accessible by aerial lifts reaching from outside of the structure (Figure 3.5).

An estimate of working time needed for the roof removal would be a minimum of 2 weeks. There are 10 total trusses to be removed, and it would take about one day for each truss and its adjacent roofing components.



Figure 3.5. View of scaffold from inside transept. (STRATA 2020)

Brick Masonry Bracing

Following complete removal of the roof framing, stabilization efforts would be initiated for the exterior brick masonry walls. The unreinforced masonry is likely not stable enough to stand on its own without some sort of lateral bracing. In addition, the gable walls at either end of the transept are too tall to safely install lateral bracing. It is recommended that the gable walls be disassembled from the peak to approximately the height of the adjacent walls, at or slightly above the tops of the buttresses (Figure 3.6). Disassembly would be performed by hand from an

aerial lift, and efforts should be made to salvage, sort, and palletize the existing brick units. It is important that, during salvage, face brick be separated from backup brick. The exterior wythe of brick is likely a harder brick, fired at higher temperatures, resulting in a less porous brick that is more suitable for exterior exposure. Interior wythes of brick are known as salmon brick and would have been fired at a lower heat in the kiln, resulting in a more porous brick that is not suitable for installation on the exterior face of the wall. This distinction between the quality of brick was common for earlier mass masonry construction methods.

Any remaining components of the rose windows on the gable walls should also be salvaged during the disassembly of the walls.



Figure 3.6. South gable end of transept. Area to be disassembled is shaded in green. This work would be duplicated on the north transept wall. (STRATA 2020)

The east brick wall of the transept is currently supported by steel braces that were installed during previous stabilization efforts (Figure 3.7). This bracing should remain in place. Structural

analysis of the existing braces should be performed to determine if they are adequate to resist the wall falling inward. Temporary bracing (now removed) had been installed for the north wall of the nave during the previous truss stabilization efforts (Figure 3.8). Similar bracing would be used for the remainder of the transept and nave walls. The new bracing would have more members compared to the existing bracing, and feature waler beams on the interior face of the walls. It is unclear from visual observations or from documents previously provided if the floor of the crawlspace is at or below the elevation of exterior grade. It is presumed that the floor of the crawlspace is below the level of exterior grade, and another component of bracing would be needed lower on the interior face to resist lateral earth pressures.

A total of 11 new braces would need to be installed for the north and south nave walls and the north and south walls of the transept, while the bracing on the east elevation would remain in place. Installation would require the use of an aerial lift and a truck-mounted crane for lowering steel into place on both the inside and outside of the masonry walls. The anticipated time of installation would take 2 weeks.



Figure 3.7. Current bracing configuration on east wall. (STRATA 2020)



Figure 3.8. Previous bracing for the north wall, since removed. (Courtesy Tommy Jameson)

Floor Framing

As part of a stabilization project, it would not be necessary to remove the floor framing except where needed to install bracing for the brick walls. The floor could be left in place, and sacrificial, but long term re-use or repurposing of the building would require full replacement of all floor framing. Please note that any of the floor framing left in place should not be considered safe for access.

Tower Repairs

On the north side of the south tower, the brick over the door lintel is ready to fall. This area of brick should be carefully removed, and it is recommended that this area, along with the whole door opening be temporarily infilled with brick or CMU until full repairs or restoration of the structure can be completed.

The areas of brick at the tower corners that have come away with Truss T-1 should be reinstalled. All new bricks should match the existing bricks in hardness, color, texture, and size. New bricks should be fully toothed into the existing walls. Do not install partial bricks to make this repair.

Upon completion of this phase of the work, if not directly proceeding to Stabilization Phase 2 - Long Term, it is recommended to install perimeter security fencing that is durable and can be left for an extended period.

Salvaging Materials

After this initial phase of stabilization is completed, it may be possible to salvage the organ and some other interior furnishings and features. It may be possible to remove the window sashes,

but the window frames should remain in place and solid blocking or infill should be installed to provide stability to the openings. This work should be done only by an experienced demolition contractor and not by the general public or contractors who do not specialize in this type of work.

Schematic Drawings – at the end of the report

Refer to drawing S1 for a schematic Church foundation plan, showing the overall footprint and anticipated locations of bracing. A schematic bracing detail is shown on drawing S3. Refer to drawing S2 for a roof framing plan.

Stabilization Phase 2 - Long Term

The preceding Stabilization Phase 1 - Short Term recommendations represent a minimum of what would be required to potentially salvage the brick masonry walls and towers of the church building. If implemented, the Phase 1 work would serve to stabilize the brickwork, but could only be considered temporary stabilization, because the brick would remain in a deteriorated condition and will continue to deteriorate exposed to the elements. Further steps may be taken to minimize the amount of moisture intrusion into the brick matrix in Stabilize Phase 2 – Long Term. These Phase 2 efforts would be required for reuse of the remaining structure for any potential long term rehabilitation, repair, or memorial-type of project in the future.

Perform miscellaneous brick replacement for missing or deteriorated brick on exterior wythe of the perimeter walls. This may be done using salvaged face brick from the disassembled gable areas. If there is not enough brick on site, material may be sourced from a nearby salvage yard to find historic bricks that match the existing bricks in hardness, color, texture, and size.

Perform crack stitching above pointed arch windows. This involves inserting a steel rod into the bed joints of the masonry, bridging across the cracks over the windows. The rods are stainless steel and helical shaped. A mortar joint is raked out and the rods are inserted into the wall. The joints are then repointed, and the rod is hidden from view.

Perform 100% mortar joint repointing for all brick masonry.

Repair the cementitious encasement/parging of the brick window sills and tops of buttresses.

Provide galvanized sheet metal flashing with drip edges along the top of the masonry walls to prevent direct moisture intrusion into the exposed top of the brick walls and prevent water from running down the face of the walls.

Perform flowable grout injection to fill collar joints or voids in masonry walls.

The full scope of long term repair needs for the towers is unknown at this time because the tower roof framing could not be fully observed in this assessment. There is a potential for the need of replacement or addition of supplemental framing to the existing roof framing. Also, it is unlikely that the current mass masonry construction for the tower walls would meet current design requirements. If new roofs are needed for the towers, it may require bringing the walls up to current code. One option for doing this would be the installation of steel framing on the inside of the towers. Regardless, the towers should receive temporary roofing to keep water out of the structures. The doors and windows should also be completely covered with exterior grade sheathing. Install screened vents through the sheathing to provide ventilation.

Treatment Option A – Historic Shell Rehabilitation and New Infill Construction

This Treatment Option A - Historic Shell Rehabilitation and New Infill Construction assumes that both Phases 1 and 2 building stabilization have been completed. To support construction activities, the street will need to be closed for construction laydown area, or adjacent properties will need to be acquired. The costs for acquiring additional properties are not included in the cost estimate.

Rebuilding the church to match the historic condition, using the remaining building and original materials, is likely not a viable option due to modern construction and life safety code requirements. The rebuilt west wall and the rebuilt portions of the north and south transept walls would be mass masonry construction and likely be inadequate for resisting lateral wind forces required by code.

The Secretary of the Interior's Standards for Rehabilitation suggest the new building within the existing masonry walls should be recognized as a physical record of its time, place, and use. By retaining portions of the masonry and constructing the new portion of the building within the shell, the design and detailing of the new construction should be differentiated from the old. The infill design should be compatible with the massing, size, scale, and architectural features of the original church building and should protect the historic integrity of the remaining portions of the structure. They recommend the new construction look more contemporary and blend with the historic structure.

Instead, a steel frame should be constructed on the interior face of these existing masonry walls and infilled with metal studs. This framing would be the main wind force resisting system and the existing and reconstructed brick walls would essentially function as a veneer. The brick would be anchored to the metal studs at a spacing of 16-inches vertically and horizontally. Miscellaneous masonry work not included in Phases 1 or 2 above will need to be included with this work to complete the rehabilitation of the exterior shell of the building.

For the new roof truss framing, these could be constructed of either structural steel or glulam beams. The configuration would be similar to the existing trusses and feature columns against the interior face of the walls similar to the repaired trusses. Investigations would need to be performed for the footings that were installed for the repaired trusses, to ensure that no significant damage has been sustained following the storm and collapse of the structure. If they are in good condition, they may be able to be re-used for the new truss columns. The new framing would also connect to the tops of the brick walls to effectively brace them from lateral movement. Refer to drawing S4 for a schematic section showing a new typical roof truss.

The new finished ceiling system could closely replicate the historic ceiling with stained beaded boards, or for a less expensive option, it could be painted drywall to highlight the new roof trusses. A new roof structure would be installed that would consist of purlins, and rafters, with decking and a new roof cladding and flashings. Research as to the original roofing material should be conducted to try to replicate the original material with contemporary materials. New gutters and downspouts to direct water away from the foundation should be installed.

The new floor framing could either be level or sloped like the original floor. It should be noted that the original floor was both sloped and concave; this effect would be difficult and costly to replicate. Steel beams could be installed instead of built-up mass timber beams, and wood or steel joists could support the new flooring. The floor framing could be sloped similarly to the old flooring. Proper preparation of the crawlspace, including vapor barrier, adequate ventilation, and insulation, is recommended, to meet current building and energy code requirements.

The interior of the church would be constructed of all new materials and finishes; however, the interior of the church can be designed to retain the original volume with the soaring ceilings of the historic church space. This new interior construction will provide the opportunity to install new mechanical and electrical systems, insulate walls, and install new electrical and lighting throughout.

The historic stained glass window sashes that remain could be restored and reinstalled in their original locations in new frames. The west wall would require complete reconstruction and contemporary stained glass or decorative glass windows could be installed to match the size and configuration of the old windows. Where historic windows are missing, contemporary art glass windows could be installed. Replica exterior doors could be installed throughout the exterior of the building, and the exterior stairs restored with new railings.

The north and south gables of the transept would require reconstruction, as would the northeast and southeast interior rooms. It is unlikely that there are many of the original materials in these rooms that can be salvaged, as these rooms have settled below the elevation of the surrounding exterior walls. One of these spaces may have been Reverend Morris' study, and further consideration of stabilization or retention may be considered as part of the larger plan.

The rehabilitated facility must meet current ADA accessibility standards. The design of a dais or similar type of raised area might once again focus on a restored organ. A new dais could be constructed closer to the floor level to offer easier ADA access. A new exterior ramp could also be included in the design to provide access into the structure.

This new building within the historic brick walls would offer flexibility for a variety of new interior uses. Spaces could be designed for flexible use, interpretive exhibits, community gathering, and other functions. Restrooms could be located in the corner rooms or a separate outbuilding.

Sitework would include new utilities to the building, new sidewalks, regrading for positive slope away from the foundations, French drain at the perimeter of the building, new grass, and new plantings similar to the historic plantings.

This option to utilize the existing exterior masonry walls as part of the new construction of the church will be very costly. This design will require a significant amount of detailing to effectively utilize the historic brick walls in a non-structural capacity, while essentially building a new church from within. This would include developing construction details that successfully merge new and existing building systems. For example, one design challenge involves detailing new soffits to

overhang the existing exterior masonry walls. The exterior walls would be significantly thicker than the current walls, in order to accommodate for the steel framing and insulation. The wall areas where the steel columns support the new trusses may also project further from the wall, creating pilasters, which is a departure from the historic design.

Reconstruction of this church in this manner may lead to dedesignation the property as a National Historic Landmark, due to the loss of original historic integrity. The proposed scope of work would need to be studied and coordinated with the NHL program to determine the options.

Examples of contemporary infill construction within a historic masonry structure are presented below. While a roof clad in glass would prove to be too hot for the Arkansas climate, the example does show a new steel roof structure integrated within a historic masonry shell.



Interior and Exterior of the Broerekerk in the Netherlands.

([https://nl.wikipedia.org/wiki/Broerekerk_\(Bolsward\)#/media/Bestand:20140503_Broerekerk_Bolsward_Fr_NL_\(3\).jpg](https://nl.wikipedia.org/wiki/Broerekerk_(Bolsward)#/media/Bestand:20140503_Broerekerk_Bolsward_Fr_NL_(3).jpg))



New laminated timber roof over a concert hall in the 1230 nave of St. Nicolai in Visby, Gotland, Sweden.
 (<https://blog.quintinlake.com/2012/04/04/photos-st-nicolai-new-church-roof-visby-sweden/>)



Example of new interior steel structure to support exterior masonry walls.
 This is a similar approach taken for adding seismic protection to load-bearing masonry structures.
<https://network.aia.org/blogs/e-gellert/2019/09/13/persw>

Treatment Option B – Demolition and New Construction

Treatment Option B – Demolition and New Construction is two-fold. First, this option explores a wholesale demolition of the existing structure. Second, the construction of a new structure on the existing site, that may incorporate historic salvaged bricks for the cladding and other architectural elements.

This cost estimate does not include costs from the preceding Stabilization - Phase 1 and/or Stabilization - Phase 2 sections. However, many of the recommendations from these sections would apply for the complete demolition of the building.

The first component of this option is the wholesale demolition of the structure. The cost estimate for this work includes the use of a mass-destruction type of demolition, which may include the use of a wrecking ball. Great care should be taken to protect the adjacent buildings to the north and south. A systematic approach may be used, that would allow for salvaging of some materials. Salvaging would include selection of bricks, cleaning, and palletizing the brick units for reuse. Salvaging historic window sashes, the organ, and other architectural components will need to be scheduled into the demolition process.

The second component of this option is to construct a new building or a similar type of structure in this location. The new building could be completely different than the historic church structure and more contemporary or commemorative in its design. For the purposes of construction cost estimating, the design team has priced a new structure that has a similar footprint with a soaring roof volume, large interior space, and reuse of the historic brick cladding. New construction could allow for design of a basement with mechanical space, or alternatively, a slab-on-grade approach with other means to satisfy mechanical and plumbing systems. All of these factors would need to be considered. The finished floor level elevation could be near grade to facilitate universal accessibility. Opportunities to reuse historic stained glass window sashes or other salvaged architectural elements will greatly depend on the demolition efforts and final design.

The design of the new structure would involve planning and programming sessions with the Centennial Foundation and possibly other community groups or stakeholders to consider impacts to the neighborhood.

Construction of a completely new building in this manner would most likely lead to dedesignation of the property as a National Historic Landmark. The Centennial Foundation would need to work closely with the National Historic Landmark coordinator.

Treatment Option C – Memorial Concept

Treatment Option C – Memorial Concept explores options for the Centennial Foundation to memorialize the Centennial Baptist Church building, its spirit, and its history. The design of memorials reaches as far back as human existence. They can be somber places or places of reflection and hope. They provide symbolism. They can convey stories and provide inspiration for those experiencing the memorial.

Memorials can be buildings, monuments, urban spaces, landscaped garden spaces, sculptures, and a combination of indoor and outdoor areas. Consideration for the context will be critical when considering a memorial for this site, as there are residential properties, a busy roadway, a historic fort reconstruction, and commercial functions on adjacent sites. The site also provides no public parking or amenities in its current state.

The vision for a new memorial must come from the Foundation and the community and address their concerns for commemorative function, as well as providing the opportunity for gathering and education. The goal would be to provide a unique and authentic experience to convey the interpretive themes the Centennial Church Foundation has at the forefront of its purpose and for providing opportunity for continuing the important conversations. Crafting this Vision will be the most important factor when considering the existing site, building ruins, and potential for the future. Partners for Sacred Places may be a useful resource to assist the Centennial Foundation and help work with the community to craft a vision for the future of this building or development of a memorial.

An outline of possibilities to start this discussion is listed below.

- 1. Retain all or Portions of the Exterior Walls and/or One or More Towers:** This option explores the complete interior demolition of the church proper and retaining all or portions of the exterior walls and towers. The space inside could be completely infilled to be at grade, and new infill construction that is more contemporary might be considered. The resultant space might be open-air or contained.

A new design for a memorial might include retaining the corner tower, or both towers, and incorporate these into the design of a memorial on the site and demolishing the other church walls in their entirety.

The goal would be to retain and preserve remnants of the historic physical form of the church to continue to convey its story while incorporating the remnants into a more contemporary interpretive space. This memorial might include indoor/outdoor spaces for gathering and special events, intimate spaces for contemplation, and exhibits.

Examples are shown below.

Old Palapye Museum Proposal, Botswana



[old palapye museum proposal is set within the ruins of a burnt brick church in botswana \(designboom.com\)](http://designboom.com)

Exterior rendering of Menokin's 'The Glass House Project2.'



[\(exterior rendering monikins' glass house project - Bing images\)](#)

2. **Memorial Through Buildings, Site Design, and Sculpture:** This option may include partial reuse of the building ruins, or it may include complete demolition of the remaining structure.

Many of our nation's greatest monuments and memorials were designed through open or invited competitions. In 1996, Congress authorized the competition for the **Martin Luther King, Jr. Memorial** in Washington, DC. There were over 950 participants.



[Building the Memorial - Martin Luther King, Jr. Memorial \(U.S. National Park Service\) \(nps.gov\)](https://www.nps.gov/mmlk/)

The National Memorial for Peace and Justice opened to the public in 2018 in Montgomery, Alabama. The memorial confronts racial inequality as a legacy of slavery. This 6-acre memorial site is comprised of sculptures, art, and design to contextualize the history of racial injustice and racial violence. The memorial was envisioned to provide a space for “truth-telling, hope, healing, and reconciliation.”



[Memorial \(eji.org\)](https://www.eji.org/)

Chapel Maria Magdalena in Zollfeld, Austria.



[chapel-maria-magdalena-s210815-p-19-520x390.jpg \(520x390\) \(e-architect.com\)](#)

Philip Johnson Roofless Church, New Harmony



[\(5233269519_36f5c5a033_b.jpg \(1023x475\) \(staticflickr.com\)\).](#)



[philip johnson roofless church - Bing images](#)

Maya Lin's "The Women's Table" in New Haven, Conn.



<https://www.nytimes.com/2017/10/20/travel/where-to-see-really-see-the-art-of-maya-lin.html>

Credit, Tony Cenicola/The New York Times, accessed 5/13/2021.

Consider Hosting a Design Competition

What do the Vietnam Memorial, the St. Louis Arch, and the Sydney Opera House have in common? These world renowned landmarks were all designed by architects under the age of 40, and in each case they were selected through open competitions.⁸

Memorials are often designed through competitions. These are carefully crafted requests for proposals (RFP) to the design community to explore conceptual solutions to artfully present a memorial in experiential, built, or other physical capacity.

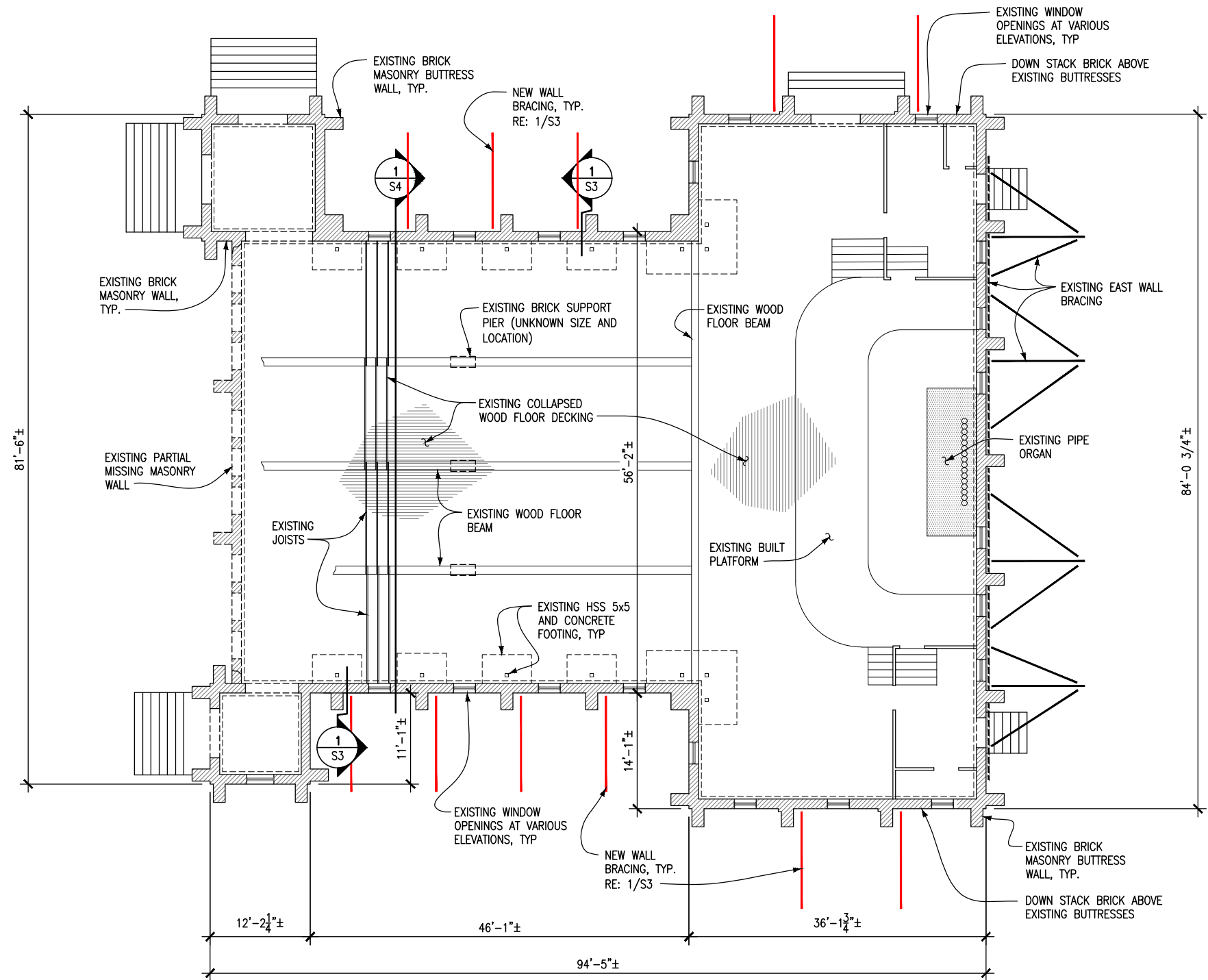
For the Centennial Baptist Church site, RFP content might include the following steps (in no specific order):

- **Crafting the Vision and Framing the Design Challenge** – What is the goal and desired outcome of a competition? Are there specific elements of the existing church ruins that would be desired to be kept as part of the final design? What is or is not mandatory to be retained?
- **Resources** – What resources are available to the competition participants? Will they visit the site? How will information be conveyed/shared with the competition participants?
- **Story** – What is the story and themes that need to be conveyed in the design? Are the themes clearly developed with all of the background, history, and other required components available to be provided to the competitors?

⁸ While researching for this report, we located this statement from a new publication by Jen-Pierre Chupin and G. Stanley Collyer, titled, *Young Architects in Competitions*, 2020.

- **Eligibility and Awards and Prizes** – Who would compete? Would this be professionals in the architectural, engineering, landscape architecture, and arts communities? Would this competition be open or invitation-only? Would there be potential for student involvement? If invited or open, is there a shortlist made to narrow the number of submittals? Are stipends or scholarships for invited participants or shortlisted participants available? Are teams allowable? For instance, a sculptor, an architect, and a landscape architect may work together on a complete submission.
- **Scheduling and Interim Submittals** – To keep pace, design competitions sometimes require submittals throughout the process.
- **Physicality** – What are the requirements for indoor/outdoor spaces, limitations, visitor resources, and other considerations?
- **Deliverables** – What deliverables are required for the competition? 3D graphics, motion and fly-through graphics, physical submittals, or electronic?
- **Constructibility and Costs** - Are costs for the construction of the memorial a factor in this competition? If so, is the available funding reasonable for the design expectations? If the long term constructibility, design, and construction costs for the submission are factors, this should be clearly expressed, so that participants understand the limitations. Design competitions can sometimes promote more ephemeral submissions that create visions and interpretive media that may not be constructible or easily implemented. Giving very clear direction is important.
- **Visitor Use** – Practically, if this memorial were to serve the greater community and attract tourists and visitors, what resources will be provided on site or nearby? Restrooms, gathering areas, access to drinking water?
- **Procedures** – Form a Task Force, Procedures, Regulations, Agreements, Jury Selection, Evaluation Criteria, Expenses, Publication and Ownership Rights, Sponsors, Advertising and Notices, Potential Disqualification Criteria, Oversight and Organization, and many other factors are all involved in establishing a design competition.

Additional partners that may provide resources for hosting a design competition might be Partners for Sacred Places or Bloomberg Foundation. The National Trust for Historic Preservation African American Cultural Heritage Action Fund may be a source for grant funding.



NOTE: DIMENSIONS ARE APPROXIMATE FIELD MEASUREMENTS

1
S1 EXISTING FOUNDATION PLAN
1/8" = 1'-0"



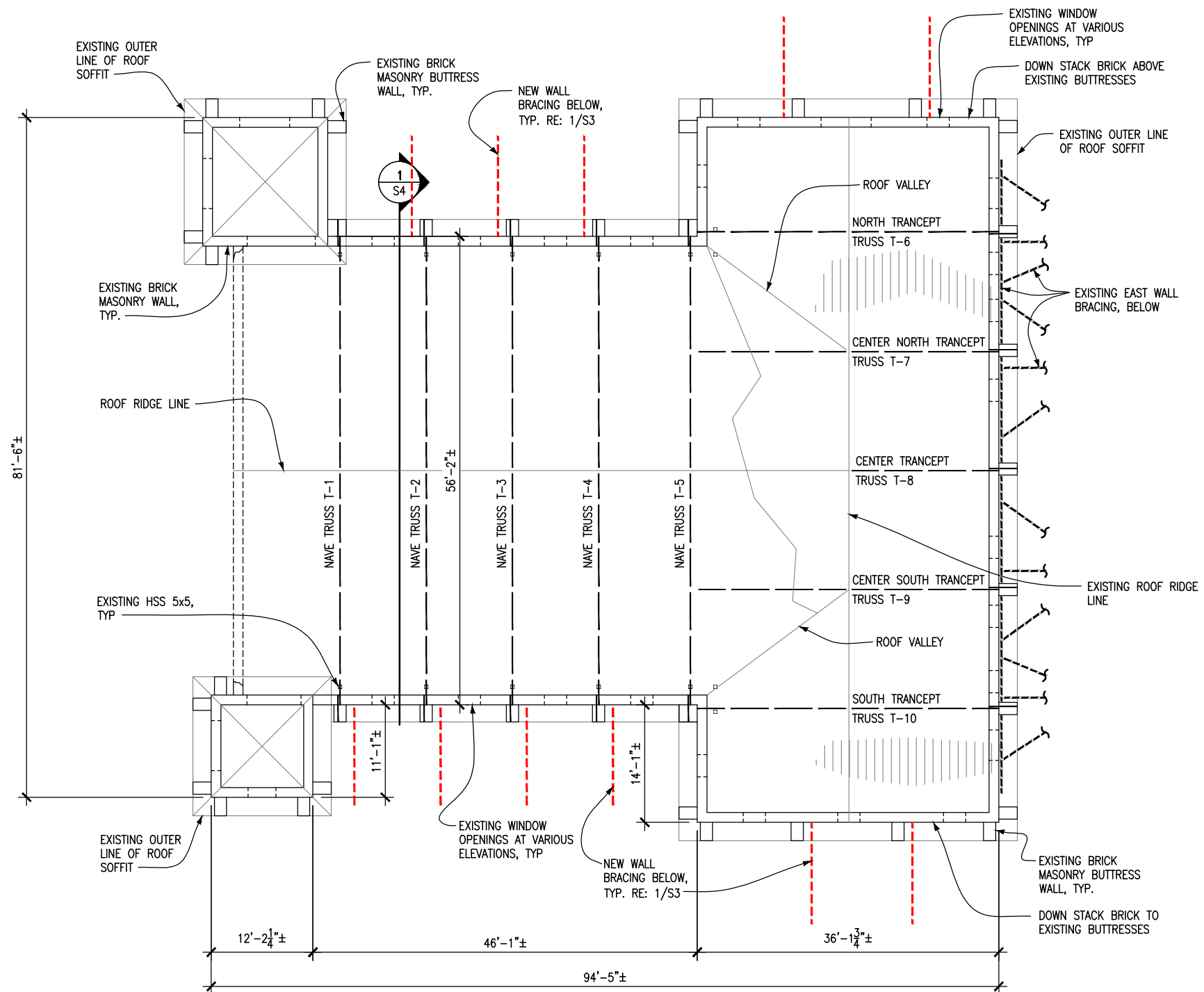
STRUCTURAL
ENGINEERING
ASSOCIATES, INC.
1000 Walnut Suite 1570
KC, MO 64106
Ph. 816-421-1042
www.seassocofes.com

DESIGNED: PDS
CADD: LEF
TECH. REVIEW: PDS
DATE: 03.19.2021

SUB SHEET NO.
S1

TITLE OF SHEET
STRUCTURAL ASSESSMENT AND
RECOMMENDATIONS FOR
THE CENTENNIAL BAPTIST CHURCH
CENTENNIAL CHURCH FOUNDATION
HELENA, ARKANSAS

DRAWING NO.
PMIS/PKG NO.
N/A
SHEET
1 OF 4



NOTE: DIMENSIONS ARE APPROXIMATE FIELD MEASUREMENTS

1
S2

EXISTING/PROPOSED ROOF FRAMING PLAN

1/8" = 1'-0"



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SUB SHEET NO.
S2

TITLE OF SHEET

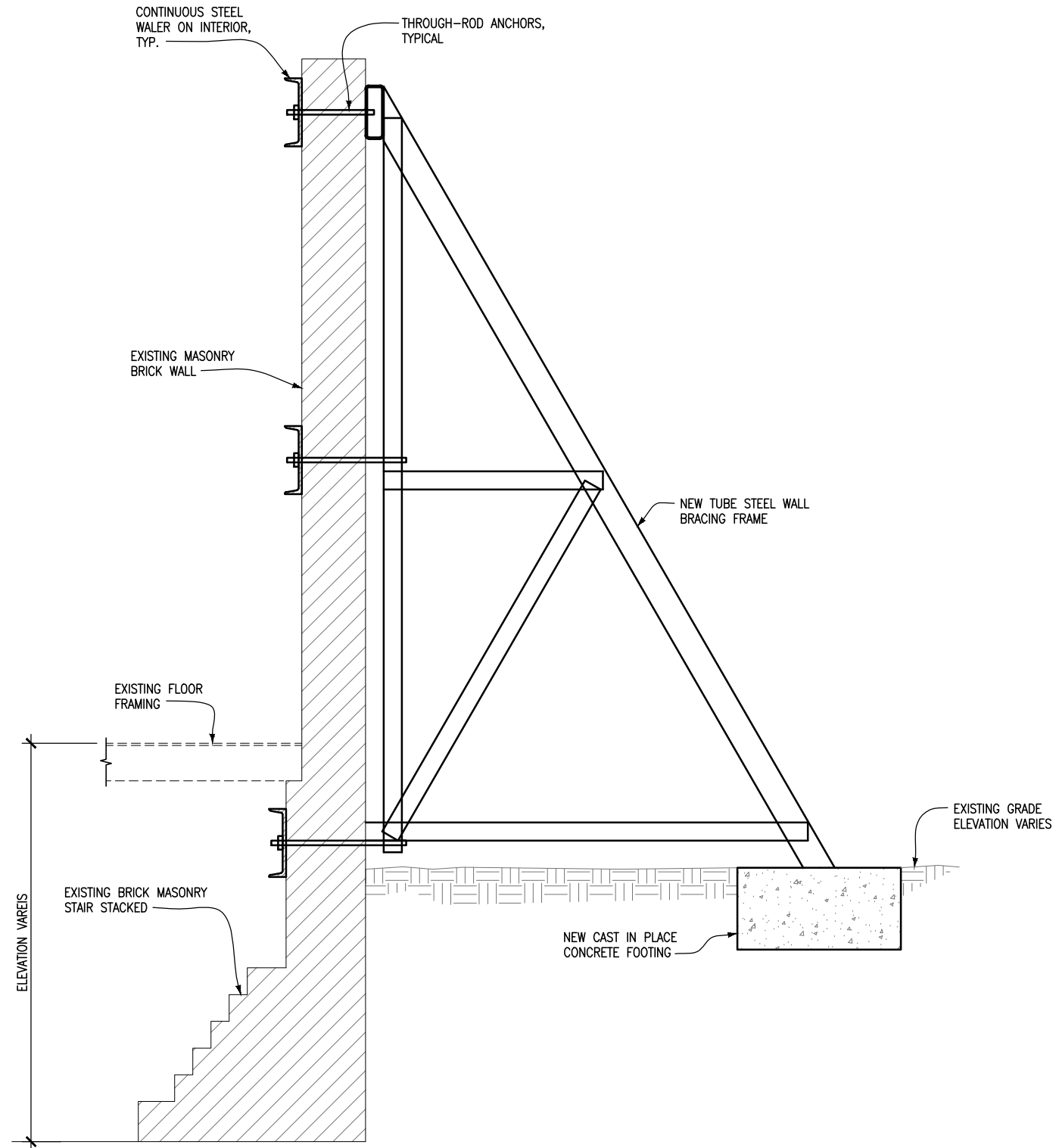
STRUCTURAL ASSESSMENT AND
RECOMMENDATIONS FOR
THE CENTENNIAL BAPTIST CHURCH

CENTENNIAL CHURCH FOUNDATION
HELENA, ARKANSAS

DRAWING NO.

PMIS/PKG NO.
N/A

SHEET
2 OF 4



1
S3
TYPICAL PROPOSED WALL BRACING SECTION
3/4" = 1'-0"

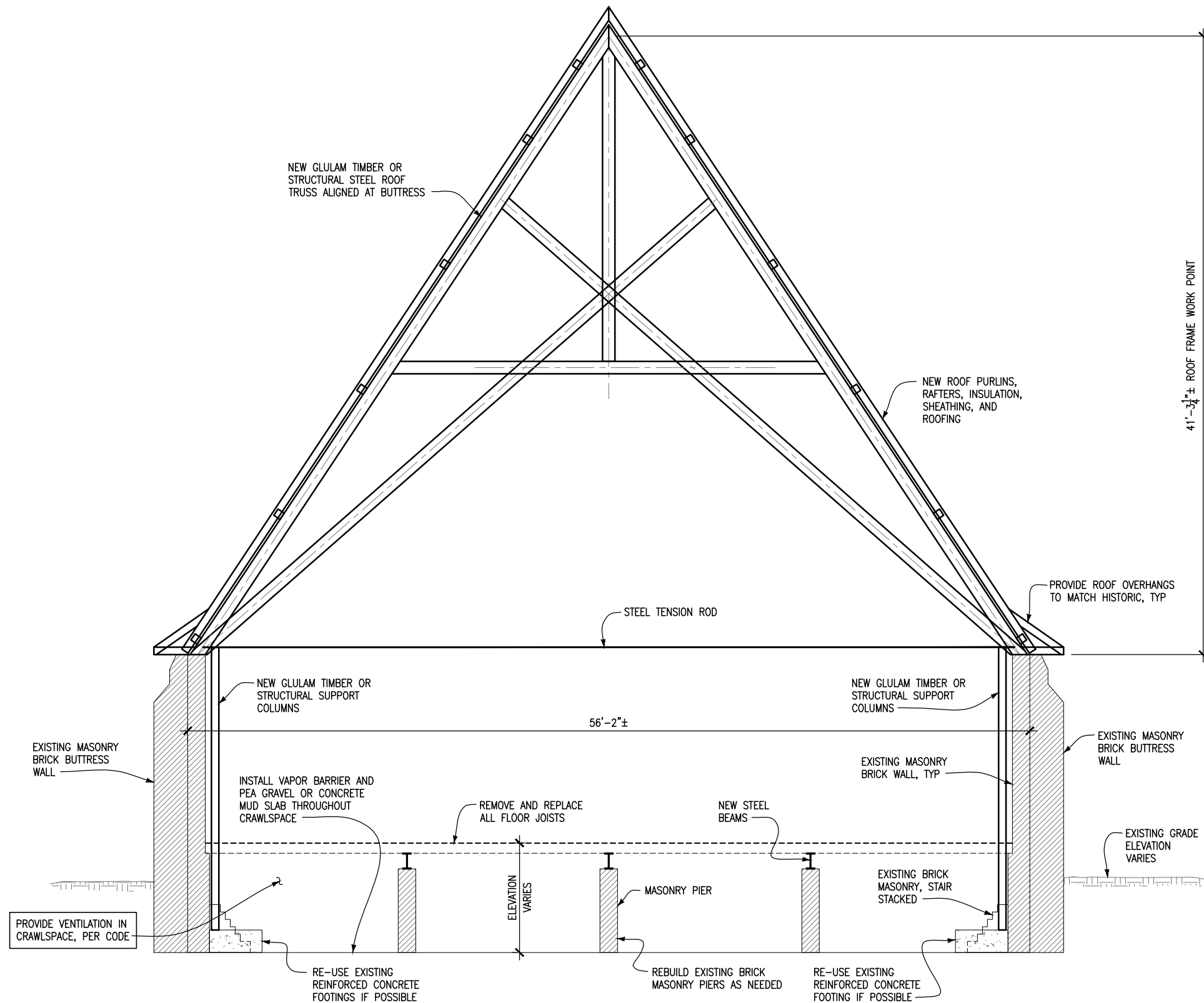
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SUB SHEET NO.
S3

TITLE OF SHEET
STRUCTURAL ASSESSMENT AND
RECOMMENDATIONS FOR
THE CENTENNIAL BAPTIST CHURCH
CENTENNIAL CHURCH FOUNDATION
HELENA, ARKANSAS

DRAWING NO.
PMIS/PKG NO.
N/A
SHEET
3 OF 4



1 BUILDING SECTION AT FUTURE ROOF TRUSS
 S4 1/4" = 1'-0"

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 DATE: 03.19.2021

SUB SHEET NO.
S4

TITLE OF SHEET
 STRUCTURAL ASSESSMENT AND
 RECOMMENDATIONS FOR
 THE CENTENNIAL BAPTIST CHURCH
 CENTENNIAL CHURCH FOUNDATION
 HELENA, ARKANSAS

DRAWING NO.
 PMIS/PKG NO.
 N/A
 SHEET
 4 OF 4



Interior, looking southwest. (STRATA 2020)

4 SUMMARY OF WORK AND COST ESTIMATES

Chapter 4 | Summary of Proposed Work and Cost Estimates

Refer to the cost estimates following this section. Costs assume involvement of outside specialized labor and elapsed time between stabilization phases and treatment. If work takes place concurrently, it will result in significant cost savings.

Stabilization Phase 1 - Short Term:

Pre-Stabilization:

- Build temporary barrier wall between church structure and adjacent occupied structure to the south. One possible option may be concrete barrier block wall, approximately 75-feet long and 10-feet tall, with steel bracing. This wall would require structural design and may take 1 week to construct.
- Close York Rd. to use for staging area. Coordinate with city and tenants to the north.
- Coordinate temporary relocation or de-energizing of overhead utility lines near the church.
- Carefully remove debris from within fenced area around the church.
- Install temporary bracing at north and south gable transept walls to prevent falling outward of these walls.
- Permanently cap all building utilities.
- Remove existing and provide new fencing for security during construction and again after.
- Transport, dispose, and recycle building debris.

Roof Framing:

- Carefully remove roof trusses in a controlled manner using a crane and two or more aerial lifts. Work should be performed under the direction of a structural engineer, as to the sequence of removal. The approximate anticipated time frame for this deconstruction would be 2 weeks. Removal of interior scaffolding, to the extent possible, would be performed simultaneously.

Brick Walls:

- Disassemble the north and south gable walls to the same height of the adjacent walls. Work to be performed from aerial lift. Bricks would be salvaged and stored for potential re-use. Total approximately 950-square feet of brick wall.
- Install lateral bracing for all freestanding walls, similar to existing bracing on east wall. 11 total braces would be installed with walers on the inside face of the walls. Lifts will be required for this work.

Tower Repairs

- Infill door at south tower with brick or CMU masonry where lintel is failing.
- Repair brick areas at corner of towers adjacent to Truss T-1.

Stabilization Phase 2 - Long Term (Assumes all work in Phase 1 has been completed):

- Install miscellaneous replacement bricks for missing or deteriorated areas on exterior wythe.
- Stitch cracks above pointed arch windows.
- Repoint 100% mortar joints for all brick masonry.
- Repair the cementitious encasement of the brick window sills and tops of buttresses.
- Install galvanized sheet metal flashing along top of walls.
- Cover all windows and openings to prevent moisture intrusion on the church proper and the towers. Provide screened vents in the tower openings to promote air ventilation
- Provide miscellaneous wall stabilization for areas of missing floor framing.
- Install flowable grout injection to fill collar joints or voids in masonry walls.
- Possibly remove and replace or stabilize and supplement tower roofs. Install temporary roofing to keep water from the interior of the tower.

Treatment Option A – Historic Shell Rehabilitation and New Infill Construction:

- Demolish interior rooms, demolish interior flooring and framing, haul off debris. Coordinate long term planning efforts and perform final inspection before demolition of the interior rooms. Future designs may desire to keep these rooms, but they are in poor condition and will require significant stabilization, as the walls and floor structure have sunk in relation to the exterior walls.
- Rebuild west gable wall with steel frame and metal stud backup.
- Reconstruct north and south gable walls of transept with steel frame and metal stud backup.
- Install steel frame and metal stud backup on all other perimeter walls to help support exterior masonry.
- Install new structural steel or glulam roof truss framing and columns.
- Install new purlins, rafters, vented insulation, sheathing, flashings, and roofing. Construct new soffits to match the historic condition.
- Install new gutters and downspouts.
- Remove and replace all wood flooring and floor framing.
- Remove interior rooms.
- Repair interior brick piers as needed.
- Restore the interior of the towers.
- Prepare existing crawlspace with new sections of reinforced slab. Provide ventilation and insulation.
- Install new steel floor beams, dimensional lumber floor joists (or steel joists), sheathing and wood flooring.
- Install restored windows and new art glass windows where missing. Install new replica exterior doors.
- Restore entry stairs and add railings.
- Install new exterior ADA ramp.
- Design Considerations:

- If the existing organ is able to be salvaged, install restored organ in a similar manner to the existing (costs not included)
- Determine if the new use requires a raised dais. This would require ADA access to reconstruct it to match the historic condition. Perhaps a dais raised only 6" would be appropriate.
- Install new wall insulation, drywall, and all new interior finishes throughout.
- Determine if the northeast and southeast rooms need to be reconstructed.
- Do there need to be interior restrooms, or would those be provided elsewhere?
- Install all new mechanical, plumbing, electrical, lighting, and technology/data systems.
 - HVAC could be located in the room below the organ and distributed throughout the crawlspace.
 - Consider installing a fire suppression system.
- Install all new utilities to the building, regrade around exterior, install perimeter French drain, install or repair sidewalks, provide grass and new plantings.
- Costs would not include new exhibits, furnishings, or equipment.

Treatment Option B - Demolition and New Building:

- Demolition (refer to the scope of work associated with the Phase 1 Pre-Stabilization efforts):
 - Provide for street closure and security fencing
 - Cap all utilities
 - Demolish entire church structure
 - Salvage bricks
- New Building – Can be new contemporary building or more traditional building. This design will need to be discussed in greater detail by the Centennial Foundation and the community.
 - Prepare site and construct new building with all new utilities, and site amenities. This is presented as a square footage cost for a new structure with the same square footage as the existing church and assuming a similar soaring ceiling/roof structure and utilizing the salvaged exterior brick as veneer.

Treatment Option C – Memorial Concept:

Due to the unlimited number of options for the construction of a memorial, these costs were not explored.

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Centennial Baptist Church National Historic Landmark
Helena Arkansas
STRATA
Structural Assessment Estimate 03/19/2021

DESCRIPTION	Short Term	Long Term	Church Reconstruction	Demolition and Reconstruction
Phase 1 - Short Term Stabilization				
General Conditions	74,001			
Pre-Stabilization	39,330			
Salvage Architectural Finishes and Organ	6,000			
Roof Framing	129,250			
Brick Walls	116,425			
Tower Repairs	5,000			
Phase 2 - Long Term Stabilization				
General Conditions		60,592		
Miscellaneous brick replacement		7,500		
Crack stitching above pointed arch windows		20,150		
100% mortar joint repointing for all brick masonry		76,334		
Repair the cementitious encasement		25,000		
Installation of galvanized sheet metal flashing along top of walls		13,850		
Covering of all windows and openings to prevent moisture intrusion		7,750		
Flowable grout injection to fill collar joints or voids in masonry walls		65,000		
Wall Stabilization		8,000		
Remove and replace tower roofs with Temporary Roofing		18,782		
Option A - Historic Shell Rehabilitation and New Infill Construction				
General Conditions			1,031,338	
Rebuild west gable wall			263,900	
Reconstruct north and south gable walls of transept.			122,400	
Install new Glulam roof truss framing			910,296	
Interior Work			2,728,758	
Sitework			100,000	
Option B - Church Demolition and New Building				
General Conditions				753,837
Building Demolition				170,542
New Building				2,844,805
subtotal	370,006	302,958	5,156,692	3,769,184
Contractor's Fee 12%	44,401	36,355	618,803	452,302
subtotal	414,407	339,313	5,775,496	4,221,487
Design/Estimate Contingency 15%	62,161	50,897	866,324	633,223
TOTAL	476,568	390,209	6,641,820	4,854,710

Short Term Stabilization	476,568
Long Term Stabilization	390,209
Church Reconstruction	6,641,820
Total cost for Reconstruciton including short and long term costs	7,508,597

NOTE: This estimate does not include professional design or engineering fees or escalation costs.

DESCRIPTION	QUANTITY	UNIT	\$	TOTAL
Phase 1 - Short Term Stabilization				
Pre-Stabilization				
Build temporary barrier wall between church structure and adjacent occupied structure to the south.	750 SF		35.00	26,250
Coordinate temporary relocation or de-energizing of overhead utility lines near the church	1 LS		2,500.00	2,500
Cap all utilities to Building	1 LS		2,000.00	2,000
Temporary Bracing of Transept N & S Walls	1 LS		5,000.00	5,000
Remove debris from within fenced area around the church	1 LS		3,580.00	3,580
				39,330
Salvage Architectural Finishes and Organ				
Allow	1 LS		6,000.00	6,000
				6,000
Roof Framing				
Carefully remove roof trusses (Labor)	10 Day		2,600.00	26,000
Structural Engineering Observation on Site	10 Day		2,200.00	22,000
Crane w/ operator	10 DAY		3,500.00	35,000
Aerial Lifts	28 Day		650.00	18,200
Roof Truss Removal Material and Equipment	1 LS		5,000.00	5,000
Street Closure	1 LS		500.00	500
Temporary Fence for Whole Site	750 LF		15.00	11,250
Take down existing fence and Re-install	1 LS		7,800	7,800
Haul off Debris	1 LS		3,500.00	3,500
				129,250
Brick Walls				
Down stack the north and south gable walls (salvage Brick)	950 SF		42.50	40,375
Install lateral bracing for all freestanding walls	11 EA		6,500.00	71,500
Aerial Lifts	7 Day		650.00	4,550
				116,425
Tower Repairs				
Infill door at south tower	1 LS		1,500.00	1,500
Repair brick areas at corner of towers adjacent to Truss T-1	1 LS		3,500.00	3,500
				5,000

DESCRIPTION	::	QUANTITY	::	UNIT \$:	TOTAL
Phase 2 - Long Term Stabilization						
Miscellaneous brick replacement						
Miscellaneous brick replacement	::	1 LS	::	7,500.00	:	7,500

						7,500
Crack stitching above pointed arch windows						
Crack stitching above pointed arch windows	::	31 EA	::	650.00	:	20,150

						20,150
100% mortar joint repointing for all brick masonry						
100% mortar joint repointing for all brick masonry	::	7,633 SF	::	10.00	:	76,334

						76,334
Repair the cementitious encasement						
Repair the cementitious encasement of the brick window sills and tops of buttresses	::	100 EA	::	250.00	:	25,000

						25,000
Installation of galvanized sheet metal flashing along top of walls						
Installation of galvanized sheet metal flashing along top of walls	::	340 LF	::	35.00	:	11,900
Aerial Lifts	::	3 Day	::	650.00	:	1,950

						13,850
Covering of all windows and openings to prevent moisture intrusion						
Covering of all windows and openings to prevent moisture intrusion	::	31 EA	::	250.00	:	7,750

						7,750
Flowable grout injection to fill collar joints or voids in masonry walls						
Flowable grout injection to fill collar joints or voids in masonry walls	::	1 LS	::	65,000.00	:	65,000

						65,000
Wall Stabilization						
Provide Misc Wall Stabilization for missing flooring	::	1 LS	::	8,000.00	:	8,000

						8,000
Remove and replace tower roofs with Temporary Roofing						
Remove and replace tower roofs	::	651 SF	::	25.00	:	16,282
Misc Roof Framing Stabilization and soffit infill	::	1 LS	::	2,500.00	:	2,500

						18,782

DESCRIPTION	QUANTITY	UNIT \$	TOTAL
Option A - Historic Shell Rehabilitation and New Infill Construction			
Rebuild west gable wall			
Rebuild west gable wall	2,000 SF	85.00	170,000
Demo Interior Rooms	900 SF	5.00	4,500
Demo Floor and Framing	6,800 SF	8.00	54,400
Haul Off Debris	1 LS	35,000.00	35,000
			263,900
Reconstruct north and south gable walls of transept.			
Reconstruct north and south gable walls of transept.	1,440 SF	85.00	122,400
			122,400
Install new Glulam roof truss framing			
Install new roof truss framing	10 EA	7,500.00	75,000
New Rafters, Purlins and Soffits	11,890 SF	10.00	118,905
New Roof Deck	11,890 SF	5.00	59,452
New Roofing, Weather Barrier and Flashing	11,890 SF	18.00	214,029
Crane w/ operator	5 Day	3,500.00	17,500
New Bead Board Ceiling	11,890 SF	25.00	297,262
Gutters	205 LF	10.00	2,048
Downspouts	240 LF	15.00	3,600
Exterior Trim and Soffits	350 LF	350.00	122,500
			910,296
Interior Work			
Steel Skeleton @ Exterior walls	6,581 SF	35.00	230,318
Tie Exterior Brick to New Structure	1 LS	175,000.00	175,000
Tower Interior Work	1 LS	100,000.00	100,000
Repair Interior Brick Piers	1 LS	15,400.00	15,400
Prepare Crawl Space and install Vapor Barrier and Concrete	6,581 SF	15.00	98,708
1st Floor Framing, Insulation and Wood Floor	6,581 SF	65.00	427,733
Historic Restoration of window	43 EA	6,500.00	279,500
Historic Restoration of Doors	8 EA	4,500.00	36,000
Entry Stair Repairs	1 LS	15,000.00	15,000
ADA Ramp	1 LS	35,000.00	35,000
HVAC/Electrical/Restrooms/Finishes	6,581 SF	200.00	1,316,101
			2,728,758
Sitework			
Walks, Paving's, Landscaping	1 LS	35,000.00	35,000
Utilities	1 LS	65,000.00	65,000
			100,000

DESCRIPTION	::	QUANTITY	::	UNIT \$:	TOTAL
Option B - Church Demolition and New Infill Construction						
Building Demolition						
Building Demolition	::	7,293 SF	::	15.00	:	109,392
Salvage Brick	::	1 LS	::	41,600.00	:	41,600
Street Closure	::	1 LS	::	500.00	:	500
Temporary Fence for Whole Site	::	750 LF	::	15.00	:	11,250
Take down existing fence and Re-install	::	1 LS	::	7,800.00	:	7,800

						170,542
New Building						
New Building	::	7,293 SF	::	375.00	:	2,734,805
Walks, Paving's, Landscaping	::	1 FL	::	45,000.00	:	45,000
Utilities	::	1 EA	::	65,000.00	:	65,000

						2,844,805

